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**CLAIMS**

1. In a wireless communication system, a method for supporting power  
2 control for a plurality of channels via a common feedback stream, comprising:  
receiving a plurality of transmissions on the plurality of channels;  
4 determining signal quality of the transmission received on each channel;  
generating power control information for each channel based on the  
6 determined received signal quality for transmission received on the channel;  
multiplexing power control information generated for the plurality of  
8 channels on a plurality of feedback substreams defined based on the feedback  
stream; and  
10 transmitting the plurality of feedback substreams.

2. The method of claim 1, wherein each feedback substream is assigned  
2 to a respective channel to be independently power controlled.

3. The method of claim 1, wherein the feedback stream is formed by a  
2 power control field transmitted in a series of slots, with each slot corresponding  
to a particular time interval.

4. The method of claim 3, wherein the power control information  
2 generated for each feedback substream is transmitted in the power control  
field.

5. The method of claim 3, wherein each feedback substream is assigned  
2 to a respective set of slots.

6. The method of claim 5, wherein the slots assigned to the plurality of  
2 feedback substreams are selected based on a particular repeating pattern.

7. The method of claim 3, wherein two feedback substreams are defined.

8. The method of claim 7, wherein the slots assigned to the two feedback  
2 substreams are selected based on an "n-m" pattern, wherein n slots are assigned  
to a first feedback substream for every m slots assigned to a second feedback  
4 substream.

9. The method of claim 8, wherein the "n-m" pattern is either "1-1", "2-1",  
2 "4-1", or "14-1".

10. The method of claim 1, wherein each feedback substream is  
2 associated with a respective feedback rate, and wherein an aggregate feedback  
rate for the plurality of feedback substreams is equal to or less than the  
4 feedback rate of the feedback stream.

11. The method of claim 10, wherein two feedback substreams are  
2 defined, wherein the feedback rate for a first feedback substream is 1000  
command/second or greater, and wherein the feedback rate for a second  
4 feedback substream is 500 command/second or less.

12. The method of claim 1, wherein the plurality of channels include a  
2 dedicated channel and a shared channel.

13. The method of claim 12, wherein the plurality of feedback  
2 substreams are utilized for feedback during time periods when the shared  
channel is assigned for transmission, and wherein the feedback stream is  
4 utilized for feedback during time periods when only the dedicated channel is  
assigned.

14. The method of claim 12, wherein the feedback substream assigned to  
2 the dedicated channel has a higher feedback rate than that of the feedback  
substream assigned to the shared channel.

15. The method of claim 1, wherein the power control information  
2 generated for at least one channel comprises power control bits indicative of  
whether the received signal quality is above or below a target level.

16. The method of claim 1, wherein the power control information  
2 generated for at least one channel comprises values indicative a received signal-  
to-noise-plus-interference ratio.

17. The method of claim 1, wherein the wireless communication system  
2 conforms to W-CDMA standard.

18. The method of claim 17, wherein the plurality of channels include a  
2 downlink dedicated physical channel (downlink DPCH) and a physical  
downlink shared channel (PDSCH).

19. In a W-CDMA communication system, a method for supporting  
2 independent power control for two channels via a common feedback stream,  
comprising:  
4 receiving two transmissions on the two channels;  
determining signal quality of the transmission received on each channel;  
6 generating power control information for each channel based on the  
determined received signal quality for transmission received on the channel;  
8 multiplexing power control information generated for the two channels  
onto first and second feedback substreams defined based on the feedback  
10 stream, wherein the first feedback substream has a feedback rate of 1000  
commands/second or greater and the second feedback substream has a  
12 feedback rate of 500 commands/second or less; and  
transmitting two feedback substreams.

20. In a wireless communication system, a method for supporting power  
2 control for a plurality of channels via a plurality of feedback substreams,  
comprising:  
4 receiving a plurality of transmissions on the plurality of channels;  
determining signal quality of the transmission received on each channel;  
6 generating power control information for each channel based on the  
determined received signal quality;  
8 multiplexing power control information generated for the plurality of  
channels on a plurality of feedback substreams, wherein each feedback  
10 substream is defined by a respective field in each slot of a feedback subchannel;  
and  
12 transmitting the plurality of feedback substreams.

21. The method of claim 20, wherein the plurality of feedback  
2 substreams have equal feedback rates.

22. The method of claim 20, wherein two feedback substreams are  
2 defined by two fields in each slot.

4 a signal quality measurement unit configured to receive and process a plurality of transmissions on a plurality of channels to determine signal quality of the transmission received on each channel; and

25. The power control unit of claim 24, wherein the plurality of feedback  
2 substreams are assigned to respective sets of slots, with each slot corresponding  
to a particular time interval.

27. The power control unit of claim 26, wherein the slots assigned to the  
2 two feedback substreams are selected based on an "n-m" pattern, wherein n  
slots are assigned to a first feedback substream for every m slots assigned to a  
4 second feedback substream

28. The power control unit of claim 27, wherein the first feedback  
2 substream has a feedback rate of 1000 command/second or greater and the  
second feedback substream has a feedback rate of 500 command/second or  
4 less.